RECENT ULYSSES MAGNETIC FIELD OBSERVATIONS UP TO 60 ° LATITUDE DURING INCREASING SOLAR ACTIVITY

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The Ulysses spacecraft is carrying out the first survey of the solar wind and heliospheric magnetic field from the solar equator to the poles during the rise in solar activity from minimum to maximum. Thus far, latitudes from the equator to 60°South latitude have been traversed as activity has been increasing. This same range of latitudes was covered between 1992-94 near solar minimum. Key scientific issues include the following. Is the magnetic flux uniformly distributed or does it now undergo significant variations with latitude? What is the inclination of the Heliospheric Current Sheet and how does it compare with source surface neutral line calculations? Does the spacecraft encounter fast wind from the polar regions and, if so, are the magnetic fluctuations still dominated by large amplitude Alfven waves? These and other questions will be pursued as we compare the state of the middle and high latitude heliosphere during solar minimum and maximum.